

The International Code of nomenclature requires that on the division of a genus "if the genus contains a section or some other division which judging by its name or its species, is the type or the origin of the group the name is reserved for that part of it." (Art. 45.) It also provides that in the case of the union of two groups of the same date a selection of a name for the combined group is to be made by the author first making the union, and that his choice cannot be changed by subsequent authors. Applying the first rule above referred to one would say that in view of Tournefort's plate cited by Linnaeus and the long pre-Linnaean use of *Erysimum* for *E. officinale*, the International Code requires the use of the name *Erysimum* in the same way as does the American Code. Applying to breaking up a genus the same rule as the International Code applies to the union of two genera one would say that the International Code (if other provisions are not applicable) plainly requires us to follow what Miller did and apply the name *Erysimum* to *E. officinale*.

Under neither system of nomenclature is the use of *Erysimum* as it is used in Gray's Manual justified.

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NOTES ON *DISTICHLIS*.

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MANY recent writers¹ have treated *Distichlis spicata* as a species of wide range on both coasts of North America and in alkaline places inland. Rydberg,² on the other hand, has treated the genus as having two species in the Rocky Mountains, *D. stricta* (Torr.) Rydb. and *D. dentata* Rydb., both distinct from the eastern *D. spicata*.

Careful examination of many collections of *Distichlis* has convinced the writer that *D. spicata*, common along the Atlantic Coast of North America, is on the Pacific Coast restricted to the region of Puget Sound, and that the plant generally distributed on the western coast and in the Rocky Mountains is a distinct species, *D. stricta*. This latter plant is of broad range, is polymorphic, and probably consists of a number of varieties.

¹ Hitchcock in Gray, Manual, ed. 7: 153-4 (1908); Britton & Brown, Ill. Fl. ed. 2: i. 250 (1913); Abrams, Ill. Fl. Pacific States i. 194 (1923); Small, Fl. Southeastern U. S., ed. 2: 152 (1913); Coulter & Nelson, New Man. Bot. Central Rocky Mts. 68 (1909).

² Rydberg, Fl. Rocky Mts., ed. 2: 72 (1923).

The compact panicles of *D. spicata* have from 10 to 20 spikelets, of which the pistillate are slightly firmer than are the staminate; these spikelets are rarely more than a centimeter in length. *D. stricta* has more open panicles, with 16 to 24 spikelets, which are from 1.2 to 2.5 cm. in length, firm and coriaceous in the pistillate plants, and papery in the staminate. The spikelets of *D. spicata* are from 4- to 9-, rarely 12-flowered, with lemmas rarely exceeding 3.6 mm. in length, while the 6- to 18-flowered spikelets of *D. stricta* have lemmas varying in length from 4.5 to 7.8 mm., except in a few plants, probably varietally distinct, which have lemmas ranging from 3.2 to 5 mm. in length. The grain of *D. spicata* is about 2 mm. long, ovoid, and not much narrowed below the two beak-like styles, while that of *D. stricta* is 2.5 to 5 mm. long, narrowed to an attenuate style, which is sometimes split, but hardly into two distinct styles as in *D. spicata*. The leaves of *D. spicata* are smooth-edged and blunt or oblique at the tip, while those of *D. stricta* are sharp-pointed and serrate at the tip. Specimens from the coasts of Washington, Oregon, and northern California have obscurely serrate leaf-tips and a grain only 2 mm. long, but otherwise resemble *D. stricta*; they probably constitute a variety of this species.

D. dentata Rydberg was described as differing from *D. spicata* and *D. stricta* in having broader leaves, spikelets, glumes and paleas, and dentate keels on the paleas. In all these characters *D. stricta* is extremely variable, and while the conspicuously dentate paleas appear at first to be distinctive, this character breaks down when it is seen that almost all of the plants have the lemmas somewhat dentate, and that there is a difference only of degree.

The synonymy, characters, and ranges of *D. spicata* and *D. stricta* may be thus summarized:

DISTICHLIS SPICATA (L.) Greene, Bull. Cal. Acad. Sci. ii. 415 (1887), as to combination, not as to plant. *Uniola spicata* L. Sp. Pl. 71 (1753), as to plant, not as to Clayton synonym. *U. distichophylla* Roem. & Schult. Syst. ii. 596 (1817), not Labillardière, Nov. Holl. Pl. Spec. i. 21. t. 24 (1804). *Briza spicata* Lam. Enc. Meth. i. 465 (1783), not Sibthorp, Fl. Graeca i. 60 (1806). *Festuca triticoides* Lam. Ill. des Genres 191 (1791). *F. distichophylla* Michx. Fl. Bor.-Am. i. 67 (1803); Pursh, Fl. Am. Sept. i. 84 (1814). *Distichlis maritima* Raf. Journ. Phys. lxxxix. 104 (1819). *D. nodosa* Raf. l. c. *Brizopyrum americanum* Link, Hort. Berol. i. 160 (1827). *B. spicatum* Hook. & Arn. Bot. Beech. 403 (1841). *Poa Michauxii* Kunth, Rev. Gram. i. 111 (1829) and ii. 533. t. 181 (1832), and Enum. i. 325 (1833).—Plants

1.5–4 dm. tall: leaves 5–15 cm. long, spreading or ascending, flat to involute, smooth on edge and tip (very rarely with a few scattered serrations toward the tip); tips bluntish, obtuse, or oblique; ligule a ring of very short hairs, rarely with a sparse tuft of silky hairs coming from the mouth of the sheath: panicles with 10–20 spikelets, cylindric, compact: spikelets 5–10(–14) mm. long, soft, the pistillate a little firmer than the staminate: first glume (0.4–)2–3.5 mm. long; second glume 2.5–4 mm. long; lemma 3.5 (–3.6) mm. long, the pistillate with a slightly differentiated hyaline margin, the staminate papery throughout; palea 3–4.5 mm. long, hyaline, firmer on the keels, which are minutely ciliolate; grain reaching 2 mm. in length, with two styles on the hardly narrowed top, not truly beaked; rudiments of the stamens minute in pistillate plants, the anthers represented by globular or sagittate heads; anthers 2–3 mm. long; the rudiments of the pistil very rarely present in staminate plants.—Salt marshes, Prince Edward Island to Florida; West Indies; Vancouver Island; South America; perhaps in western Texas.¹

D. STRICTA (Torr.) Rydb. Bull. Torr. Bot. Cl. xxxii. 602 (1905). *Uniola stricta* Torr. Ann. N. Y. Lyc. i. 155 (1824). *U. multiflora* Nutt. Trans. Am. Philos. Soc. v. 148 (1837). *U. (Brizopyrum) flexuosa* Buckley, Proc. Acad. Nat. Sci. Phila. 1862, 99 (1862). *Distichlis maritima*, var. *stricta* Thurb. in Wats. Bot. Cal. ii. 306 (1880). *D. spicata* (L.) Greene, Bull. Cal. Acad. Sci. ii. 415 (1887). *D. spicata stricta* Scribn. Mem. Torr. Bot. Cl. v. 51 (1894). *D. dentata* Rydb. Bull. Torr. Bot. Cl. xxxvi. 536 (1909).—Plants 1–5.5 dm. high: leaves 2–15 cm. long, strongly ascending or somewhat spreading, flat or loosely involute, stiff or flexuous, usually strongly serrate on the edges and sharply pointed tips, often pubescent on the inner surface; ligules often with a copious tuft of hairs coming from the mouth of the sheath: panicle with 16–24 spikelets (except in some plants of the interior, probably varietally distinct, with 4–10 spikelets), long-cylindric, rather more open than that of *D. spicata*: spikelets 9–25 mm. long, 6–18-flowered, the pistillate hard and coriaceous, the staminate much softer; first glume 3.2–7.8 mm. long; second glume (2.1–)3–7 mm. long; lemma (3.2–)4–7.8 mm. long, the pistillate with a conspicuous, often broad and torn, hyaline margin; palea (2.4–)3–5.4 mm. long, the keels of the pistillate often ciliate, or even winged and dentate; grain (2–)3–5 mm. long at maturity, tapering to a beak, which is often notched or split; staminate rudiments minute in pistillate plants, the anther represented by a clavate, sagittate, or forked head; stamens 2–4 mm. long; rudiment of pistil present or absent in staminate plants.

¹ Sheets in the Gray Herbarium are labelled: "Collected in Expedition from Western Texas to El Paso, New Mexico, May–October, by Charles Wright, no. 783." Wright's records say of this number: "San Pedros, Devil's River, Declivity of hills; flowers purplish." The last two words certainly do not refer to the specimens in question, and the following note, bracketed from numbers 777 to 802, suggest that the labels may have become mixed:—"Some of these were spoiled during my sickness and thrown away."

—British Columbia and Saskatchewan to Arizona, New Mexico, and Oklahoma, and westward to the Pacific Ocean; introduced about railroad yards in Sheffield and Kansas City, Missouri. A very variable species in size, habit, and technical characters.

D. PALMERI (Vasey) Fassett in Johnston, Proc. Cal. Acad. Sci. ser. 4: xii. 984 (1924). *Uniola Palmeri* Vasey, Gard. & For. ii. 401. f. 124 (1899).—"Culms wiry and rigid, sometimes cane-like, two to four feet high, from subterranean root-stocks, often much branched, and many culms from one root, leafy to the top. Leaves distichous, (sometimes less than an inch apart, sometimes two to four inches apart), smooth, rigid, erect, involute, with a long, pungent apex, the lower two to four inches, the upper four to nine inches long and exceeding the panicle." Pistillate panicles much exceeded by the leaves, staminate plants with one or two leaves barely reaching the end of the panicle.¹ Ligule a very short collar-like ring of hairs, with a woolly tuft of hairs at the angles. "Raceme of the staminate plants six to nine inches long, narrow, the branches mostly in two's or three's, the lower ones one to three inches long, erect, compound below . . . Racemes of the fertile plant shorter, thicker and more condensed, being four to six inches long, and the branches sessile or short-stalked." Pistillate spikelets 2.5–3.5 cm. long, firm, with one or two empty lemmas; first glume 10 mm. long; second glume 12 mm. long; lemma 15 mm. long; palea 10 mm. long; grain plump, beaked, nearly 1 cm. long; staminate rudiments very minute in pistillate plants, 0.2 mm. long, apparently representing the filaments only; staminate spikelets 2 cm. long, less firm and narrower than the pistillate, without empty lemmas; anthers 4–5 mm. long; pistillate rudiment wanting in staminate plants.²—Salt marshes about the Gulf of California. MEXICO: Horseshoe Bend, Sonora, April, 1889, *Dr. E. Palmer*, no. 924, 929; Head of Gulf of California, 1889, *Palmer*; Las Animas Bay, Lower California, May 8, 1921, *I. M. Johnston*, no. 3490.

Dr. Vasey says of this plant: "Its general appearance is that of a *Distichlis*, from which it differs in having four of the lower glumes (instead of two only) in each spikelet empty, i. e., without palet or flower, and in the disarticulation of the rachis between the spikelets of both sexes—that is, the spikelets break apart between the several flowers when mature. This disarticulation occurs also to some extent in the fertile spikelets of *Distichlis*, but not in the male or infertile ones. On the other hand it differs from *Uniola* in its dioecious character, and here it agrees with *Distichlis*."

The pistillate spikelets are coriaceous, while the staminate are soft and papery; the pistillate panicles are greatly over-topped by

¹ This type of sexual dimorphism is exhibited to some extent by all species of *Distichlis*.

² Description quoted in part from Vasey, l. c.

the leaves, while the staminate are short-exserted, as is usually the case in *Distichlis*; the pistillate spikelets have one or two empty lemmas as in *Uniola*, but the staminate spikelets are those of a *Distichlis*: these characters place this species unquestionably with the latter genus.

In regard to the anatomical characters of this grass, Holm says: "While engaged in studying the leaf-structure of *Uniola Palmeri* Vasey, I was well aware of the great similarity that exists between this species and the genus *Distichlis* in external characters of the inflorescence, the rhizome, and the rigid, densely 2-ranked, involute leaves. Now having examined the anatomy of the leaf in a number of species of *Distichlis*, the similarity between these two plants has been found to be so striking that it seems most natural to consider *Uniola Palmeri* as a true *Distichlis*. Professor F. Lamson-Scribner has informed me that on seeing the plant he immediately took it for a *Distichlis* and was unable to distinguish it from that genus."¹

The large plump grains of this grass are eaten by the Indians, and Vasey gives an interesting account of their methods of gathering and preparing this food.

DISTICHLIS distichophylla (Labill.) comb. nov. *Uniola distichophylla* Labillardière, Nov. Holl. Pl. Sp. i. 21. t. 24 (1804), not Roem. & Schult. Syst. ii. 596 (1817). *Poa distichophylla* R. Br. Prod. Fl. Nov. Holl. i. 182 (1810); Kunth, Enum. Pl. i. 325 (1833). *P. paradoxa* Roem. & Schult. Syst. ii. 569 (1817). *Festuca distichophylla* Hook. fil. Fl. Tas. ii. 127 (1858); F. Muel. Frag. Phyt. Austral. viii. 129 (1872-4); not *F. distichiphylla* Michx. Fl. Am.-Bor. i. 67 (1803); nor Pursh, Fl. Am. Sept. i. 84 (1814). *Distichlis maritima* Benth. Fl. Austral. vii. 637 (1878); not Raf. Journ. Phys. lxxxix. 104 (1819).

This species is only 1-2 dm. in height; the panicles have only 3-5 spikelets, which are 11-17 mm. in length; the grain is long-beaked, and is exceeded in length by the slender rudiments of the stamens; the leaves are 2-6 cm. in length, and closely spaced; the leaf-tips are long, slender, subulate, and very sharp, free from striations for a distance of from 0.5 to 1 mm. below the apex. *D. spicata*, on the other hand, attains a height of 4 dm.; the panicles have 10-20 spikelets, each only 5-10 mm. long; the grain is not beaked, but has two distinct styles, while the rudiments of the stamens are minute and much shorter than the body of the grain; the leaves are from 5-15 cm. in length, and are not as closely spaced as in *D. distichophylla*;

¹ Holm, Bot. Gaz. xvi. 275 (1891).

the leaf-tips are obtusish or oblique, and the striations of the leaf run to within 0.4 mm. of the apex. The low habit and few large spikelets make *D. distichophylla* of quite different appearance from *D. spicata*.

This plant is well illustrated by Labillardière, who shows a pistillate plant. A dissected floret is shown, however, with both pistil and well-developed stamens, a condition which does not obtain in nature.

D. distichophylla is reported from the coasts of South Australia, Victoria, Tasmania, and on the north coast of Queensland, also inland in saline places in the Grampian Mountains, Victoria.

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